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## COMPETITIVENESS, GROWTH AND LOGISTICS IMPLICATIONS: THE CASE OF THE PORT OF GENOA

*In the current world economic framework - characterized by an intense globalisation and informatization process - the phenomenon known as “death of distance” shows its effects in the transport industry as well. Therefore, the market boundaries broaden, ending up in the well-known results of hinterland overlapping and competition intensification.*

*After an analysis of relevant reasons for port competitiveness studies, the paper aims at assessing the current and coming competitive positioning of the port of Genoa within the Mediterranean basin. It also indicates possible strategies aimed at maintaining a competitive position with respect to main competitors, at least in terms of a constant market share. More in depth, it seems that successful strategies should address the improvement of the whole set of port, transport and logistics services, actually unavoidable for an efficient and complete port function.*

*The paper ends with an outline of the logistics implications linked to port development, both as a cause and a consequence of traffic increase and investigates the basic requirements to make this growth a sustainable one.*

**Key words:** Port development; competitiveness; logistics; growth strategies; infrastructures

### 1. INTRODUCTION

In the last years, world port economics has been interested by dramatic developments related to economic trend technical progress and development of logistics. In this framework, the competitive relations have changed: nowa-

days competition is played more and more on the logistics and qualitative level, involving even ports which are quite far from each other. This trend highlights a bilateral relation with the growing importance of the non monetary components of the generalized transport cost, representing on one side a consequence and on the other side one of the causes. For these reasons, a thorough evaluation of the sources of the competitive advantage of a port, or of a port system, plays now a fundamental role of port operators and policy makers.

Port performances play a relevant role for land competitiveness, as they influence firms' location choices, and for the definition of national governments' strategies. There are several ways to value port performances, e.g. analysing some critical factors, such as productivity, partial or total, economic, technical or allocation efficiency, traffic trends. The measurement of the competitive value of a port has become more difficult over time, as competitiveness increasingly depends on qualitative rather than quantitative parameters. In this sense, the value of an infrastructure can be defined as a function of the service that the infrastructure itself is able to offer and of the level of service customers expect<sup>1</sup>. So, a port can attract traffic not only on account of its objective technical-infrastructure characteristics, but also, and to a greater extent, if the market believes it can satisfy certain specific needs.

After a theoretical focus on the evaluation of a port's competitiveness and of some of the main existing methodologies (section 2), section 3 analyses on the one hand the last ten years' growth in containerized transport sector witnessed by the port of Genoa with respect to a selected group of west Mediterranean ports (sub-section 3.1), and, on the other hand, formulates some hypotheses on possible Genoa containerized traffic by 2015 (sub-section 3.2). Through a comparative analysis of the main results, the strategies allowing the port of Genoa to maintain the competitiveness level gained during the years are investigated, as well as the consequent logistics implications deriving from a growth in throughput corresponding to the maintenance of present market share of the main Italian port (sub-section 3.3). In the last section, the particular results, specifically related to the port of Genoa, will be extended to a general level, in order to identify a set of instruments and policies suitable for sustaining port competitiveness in future years.

## 2. WHY AND HOW TO ESTIMATE COMPETITIVENESS

There are numerous reasons standing for studies on port competitiveness, regarding mostly the necessity to assess a port's (or terminal's) present and future positioning and the identification of the best strategies and policies to

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<sup>1</sup> Piano Generale dei Trasporti e della Logistica (2001).

show off the strengths and bridge the main gaps; to make such evaluations, it is possible to make use of different methodologies; the choice among the various alternatives partly depends on available data, but also by the ultimate purpose of the evaluation and on the general context.

## 2.1 Why to estimate competitiveness

The main changes having affected the world market in the last years can be attributed to three main aspects:

- The evolution of world economy, both in terms of (i) enlargements of the market, due to globalisation trends and to institutional reasons<sup>2</sup>, and (ii) growth of the world production, which deeply influences the world trade, with particular reference to maritime transport<sup>3</sup>;
- The dimensional growth of industrial firms and the restructuring process of their logistics and distribution strategies, in accordance to the continuous attempts to gain rationale and efficiency as to products and processes;
- The development of new technologies, applied to communication and information processes and to the transport sector itself, especially the maritime mode. These innovations have further contributed to the steady reduction of transport costs, which on its turn represents one of the key factors in the intensification of competition among ports<sup>4</sup>.

Aforementioned elements on one side have undoubtedly combined to the broadening and overlapping of port hinterlands and to the strengthening of port competition, even if far away from each other; on the other side they stress the relevance of the identification of the strengths and weaknesses of a port,

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<sup>2</sup> In Europe this tendency is clearly exemplified by the enlargement of EU, still in progress, with the annexation of 13 countries to the initial core, which implies a shift of the Union's barycentre towards east, under different points of view, among which the economic, commercial, geographical and institutional one. For possible implications, among others, Ferrari *et al.* 2006.

<sup>3</sup> From UNCTAD data elaborations (2005), it is possible to affirm that, during the period 1970-2004, maritime trade has grown by 163% in terms of carried tons.

<sup>4</sup> Considering the lower and lower impact of transport costs, it seems that nowadays among the main *decision makers* the port selection process is driven by the evaluation of the logistics-transport chain on a whole rather than on the single modal section. Therefore, the quality of service provided and infrastructure available, in terms of efficiency and variety, play a greater and greater role, also as far as terminal are concerned: the tendency is that of choosing a port characterized by greater efficiency levels, even in case of a great distance to be covered with respect to origin / destination of cargo flows.

determining the level of competitiveness<sup>5</sup>, in order to exploit the former and improve the latter.

Among the numerous criteria playing a part in port competitiveness, the role of quality is increasing steadily. Particularly, as already mentioned, there is an increase in the importance of the non-monetary components of the generalised transport cost, namely time (especially with the development and strengthening of *just in time* techniques), reliability, safety, quality, to monetary factors' detriment, which tend to represent a smaller part of the generalised cost due to great technological improvements allowing the achievement of relevant economies of scale from the supply side. In this context, two factors are clearly standing out: logistics, on the one side, born in the 60's and intensely developed as from the following decade, and the new professional figures, such as the logistics integrators, able to manage and control cargo flows along a composite transport chain, from the market of raw materials to the final costumers.

The logistics strategies of industrial firms become increasingly important, leading towards outsourcing of additional activities, among which transport, culminating with the assignment of the whole *supply chain* management to a third party. The outsourcing strategy, involving the delegation/transfer of logistics operations to *third e fourth party logistics* (3PL e 4PL<sup>6</sup>) has rapidly gained ground, also thanks to the recent/latest/contemporary trend towards concentration on core business, both in the industrial sector and in distribution activities.

While logistics experiences an increasingly wide and extensive diffusion and relevance, ports take a new role on, representing the main centres for this type of activities.

This context, along with the growing concentration of logistics activities, favours the development of International Distribution Centres, providing firms with significant advantages, among which:

<sup>5</sup> The concept of competitiveness can be referred to as «the ability at producing and selling, at coping up with competition (also in a framework of contendible markets), at reacting to the competitors' strategies, at competing successfully within the market and/or entering new ones» (CNEL, 2004). It is worth specifying that competition (here, competition among operators, not as a state of the market) and competitiveness are two different concepts, the former being a state of the market, the latter a condition of the firm or entrepreneur considered. Competition can be defined as a state of the market where every producer has to face the other through appropriate strategies (implying decisions about quantity, quality, prices...); to sum up in order to face competition, a firm has to be competitive.

<sup>6</sup> The distinction between the two operators lies in the different type of activity: while 4PL is involved in the management of the whole *supply chain* without directly performing any single operation but merely coordinates and plans the activity of several 3PL, under a long term partnership relation with the customer. The 3PL, on the contrary, coordinates several service providers, combining them with other value added services (es: order management, invoicing, packaging, merchandising, traceability, customer service, etc.).

- reduction of transport costs, thanks to the rationalisation of return trips and to the increase in the size of single shipments;
- growing warehousing efficiency, in terms of faster deliveries, a greater range of services to final users, the reduction of physical assets in stock and warehouse, consequently implying time and cost savings;
- decreasing need for human resources due to smaller stock levels.

This framework gives scope for the necessity of evaluating ports' – or port systems' – competitiveness in order to make efficient and sustainable choices in the long run, both for firms on the one side and for port and institutional decision makers on the other side.

It is worth underlying a further element confirming the relevance of port competitiveness analysis: namely the possible impact of ports on firms' localisation decisions and the resulting potential economic return at regional level. Shippers and transport operators tend to combine port activities and the provision of cargo distribution services and logistics, ascribing ports a new role and the ability of attracting more and/or different investments.

At last, the relevance of aforementioned evaluations is clearly not negligible as to *decision makers*, namely when involved in the evaluation of strategic and investment options and the optimal resources allocation. An analytical and diversified approach, better if based on certain and unambiguous data, allows more consistent and efficient decisions in the long run.

## 2.2 How to measure port competitiveness

Port sector is characterised by a great complexity, in particular due to the difficulty in defining the relevant market in terms of services<sup>7</sup>; furthermore, it is worth mentioning the number and variety of actors and decision makers (shippers, carriers, forwarders, shipping agencies, suppliers of services to ship and

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<sup>7</sup> CNEL, 2004; in particular, the replaceability among ports, and consequently the presence or absence of a competitive environment, appears to be linked *in primis* to the market of services, in its turn depending on the traffic's typologies (bulk or containers; transshipment or regional traffics); as far as the geographical market is concerned, the complexity results from the difficult identification of market power's sphere of influence, depending not only on the geographical dimension, but also on different possible combinations price/quality/distance; among factors influencing the wideness of the relevant geographical market, CNEL identifies cargo destination, the length of the land segment, the availability of different modal alternatives and their efficiency level, the price and efficiency levels as a whole. At last, the features of services' supply have an effect on the geographical market's size as well; for instance, the product/commodity specialisation (affecting structural and infrastructural endowment) and liner services' number and destinations' variety of a port actually reduce the replaceability with other ports, which could represent an alternative from the sole geographical point of view.

cargo, shipping companies, ship owners, port authorities, institutions at different levels) involved in port activities, with their different tasks and aims and sometimes diverging and conflicting interests.

This huge level of complexity justifies the manifold sets of methodologies used in order to analyse port competitiveness. The different valuations differ firstly as to the essential aim and subject of the analysis, (namely in terms of quality and quantity<sup>8</sup>) and the broadness of the research field (port or single terminals; number of ports; number of observations); the choice of the methodology depends on these first distinctions.

There are basically two families of methods based on the production frontier: the parametric approach, which adopts econometric techniques, and the non-parametric line, such as the Data Envelopment Analysis (DEA). It is possible to study two different factors: the productivity index or the economic efficiency; DEA technique analyses the second one<sup>9</sup>, namely through an evaluation of the efficiency of “decision units” in certain sectors, often confronting public and private systems. As far as ports are considered, this methods compares the relative levels of efficiency of different ports or terminals. in terms of relation between employed resources and final results.

The *Strategic Positioning Analysis*<sup>10</sup> (SPA) is a more complex technique of analysis, which uses three different methodologies in order to evaluate port positioning with reference to a specific ports’ range. More in depth, it is a comparative analysis of different structures of throughput, market shares and growth rates of some ports basically belonging to the same range and potentially substitute to each other.

The main advantage of this method consists in the easy data collection and in the trustworthiness and certainty of information employed, limited to the sole traffic flows, both current and expected.

The three aforementioned methodologies forming the SPA are the *Product Portfolio Analysis* (PPA), based on the analysis of market shares and their growth, the *Diversification Analysis* (DA), directed to survey port traffic diver-

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<sup>8</sup> Qualitative analysis can regard the infrastructural or superstructural characteristics of a port or a terminal or the services offered within the port and relative capacity to satisfy the users, as well as the identification of the main port selection criteria, both on the sea side (shipping lines) and on the land one (shippers, firms, trading companies, forwarders, logistics operators, etc); this type of analysis can be carried out through the revealed preferences system or the stated preferences one: in the former case, evaluations are inferred from the observation of definite choice behaviours, while in the latter the results derive from questionnaires or interviews aimed at obtaining the opinions of a sample of port users.

<sup>9</sup> For a port application of DEA, among others, Marchese U., Ferrari C., Benacchio M., 2002, and Barros, C. P., 2003.

<sup>10</sup> Among authors having used this tool for port competitiveness analysis, it is worth mentioning Haezendonck, E., Verbeke, A., Coeck, C. (2006), and Winkelmans W., Meersman H., Van de Voorde E., Van Hooydonk E., Verbeke A., Huybrecht M., 2002

sification and efficiency levels and the *Shift-Share Analysis* (SSA), simulating the effects that an acquisition, specialisation, increase or shrinkage of a certain traffic type or category would have on a port's performances.

Combining the results obtained through the three techniques, it is possible to evaluate the future outlooks of considered ports, namely by means of the joint analysis of past traffic trends and present situation.

Within the methodological line followed for the analysis of the performances of the port of Genoa, the results of two different methods have been combined, so as in the SPA analysis: namely, the first one is directed towards the analysis of the growth recorded by the port of Genoa in the past years, the second with aimed at estimating the traffic increase necessary for the maintenance, by 2015, of a constant market share with respect to present one. As far as the forecast analysis is concerned, the evaluation of the future transport demand has been necessary. In general, as to the available techniques for such a prediction there are, among others:

- a. the identification of independent variables influencing demand: population, income, industrial production, etc;
- b. the quantification of the dependence rate through statistical regressions;
- c. the long period trend of the independent variable;
- d. the prevision about the natural evolution of future demand.

For the purposes of this analysis, two forecasting techniques will be adopted (*sub a* and *sub b*) for the simulation of two corresponding scenarios for the port of Genoa, namely of maximum and minimum demand growth.

### 3. CASE STUDY: THE PORT OF GENOA

The influence of the port of Genoa's success is not only restricted to city and hinterland's economy but also spread to whole region; the port of Genoa is usually defined as the main Ligurian industry and a natural door on Northern Italy, thanks to its privileged geographical position and significant port tradition.

In confirmation of this situation, only a low percentage of cargo handled in North West Italian region is directed to Ligurian market<sup>11</sup>, while the main region generating trade is Lombardy, which in 2003 generates almost 70% of the area's business exchanges<sup>12</sup>.

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<sup>11</sup> For further widening, see Basta, M., Chernyavska L., 2006. More in depth, Ligurian region absorbs only 7,9% of handled cargo in terms of weight, and 3,4% in terms of value.

<sup>12</sup> The analysis in terms of weight and value lead to quite similar results.



Different obstacles undermine Genoa's development as a logistic platform serving Northern Italy, including, for example, the particular morphological and urban conformation of the port-city

Most operators and institutions admit the difficulty in finding inland spaces to be used for logistics and cargo handling activities. Among the main reasons triggering these obstacles, on the one side, there are the mountain ranges bounding the city, hindering the inland development of the port, while on the other side, the historical trend to develop urban areas in the neighbourhood of the port, basically detracting space to port activities.

Consequently, looking for new spaces becomes a necessity, often in regions farther from the port, behind the Alps and Apennine range.

Consistent with the above mentioned situation and the investigations of previous sections, the key of future development of Genoa port consists in:

- the availability of areas intended for logistic activities;
- the consequent increase in the region's accessibility due to a strengthening of the infrastructural network serving the port. The port connection system should be absolutely able not only to serve markets at a great distance from Northern Italy (for instance Central Europe), but also to link efficiently waterfront and logistics zones, that - because of space's scarcity - could be efficiently located at a long distance from the port;
- service improvement, in terms of time, quality and diversification.

The aim of following sections is to provide information about the competitive positioning of Genoa port, as regards container traffic, in comparison with Mediterranean port range, including Barcelona, Valencia, Marseilles and La Spezia. The set of ports has been defined according to markets' homogeneity, the same territorial range and the substantial similarity in traffic structure. Particularly, La Spezia - second Ligurian port in order of importance - has been considered as well, in view of the good performances registered during the last years.

The first step of analysis deals with the middle-run study of Genoa's container throughput growth through a comparison with the main competitors' performances.

Once traffic trends have been analysed, in relative and absolute terms and market shares have been defined, the study goes on with an evaluation of some aspects of the main Ligurian port, concerning the maintenance of current positioning and the consequent rise in traffic.



### 3.1 Growth analysis

Focusing the sole container traffic, as results from table 1, Genoa's market share in 2005, in comparison with considered range of ports, is equivalent to more than 20%. The growing competitiveness of Spanish ports, namely Barcelona and Valencia, comes in evidence, in the light of the increase in container throughput by 60% and 50% respectively in the period 2001-2005, against the modest 6,4% growth recorded by Genoa. The market share of the port of Genoa, indeed, decreases by more than 4% during the analysed period, while Valencia and Barcelona gain almost 6% and 3% respectively. Marseilles and La Spezia as well, even though they register a traffic growth (+22,4% the former and +4,1% the latter), witness a reduction in their market share; particularly La Spezia passes from 15,8% to 12,7% of total throughput handled by the ports taken into account.

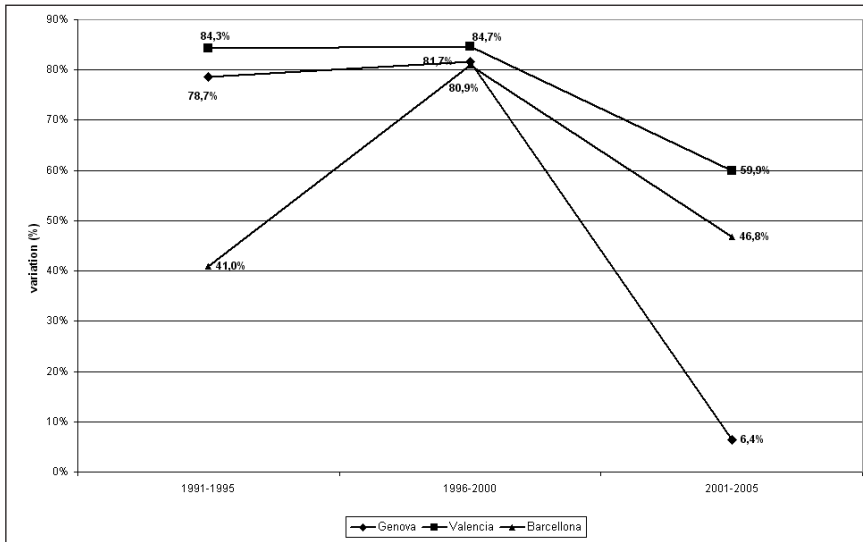
*Tab. 1: Market share 2001 and 2005, variations 2001-2005 in container throughput (%)*

	TEU 2005	Share % 2005	TEU 2001	Share % 2001	Var % 01-05
Genoa	1.624.964	20,2%	1.526.526	24,8%	6,4%
Valencia	2.409.821	30,0%	1.506.805	24,5%	59,9%
Barcelona	2.071.480	25,8%	1.411.054	22,9%	46,8%
Marseilles	908.000	11,3%	742.000	12,0%	22,4%
La Spezia	1.024.455	12,7%	974.646	15,8%	5,1%
Total	8.038.720	100,0%	6.161.031	100,0%	30,5%

*Source: authors' elaboration from Containerisation International database*

Although during the observed period the port of Genoa registers a 6,4% container throughput increase, in absolute terms, after a comparison with the range, it seems certainly more appropriate and meaningful to refer to a relative decrease: Genoa grows actually less than the range's average (+30,5%), mainly related to the excellent performances of Spanish ports.

Container throughput variations in Genoa, Valencia and Barcelona are represented in figure 1, measured in terms of five-year percentage since 1990. Except for the period 1996-2000, during which three ports show very high and homogenous container throughput increases, Valencia always presents higher rates of growth. Barcelona trend proves particularly interesting, as its throughput variation passes from +41% between 1991 and 1995 to almost +81% during the period 1996-2000. The results of five-year interval 2001-2005 reflect the economic crisis occurred in the early years of the new century: three ports suffer a growth slowdown in traffic, which however seems to affect especially Genoa.



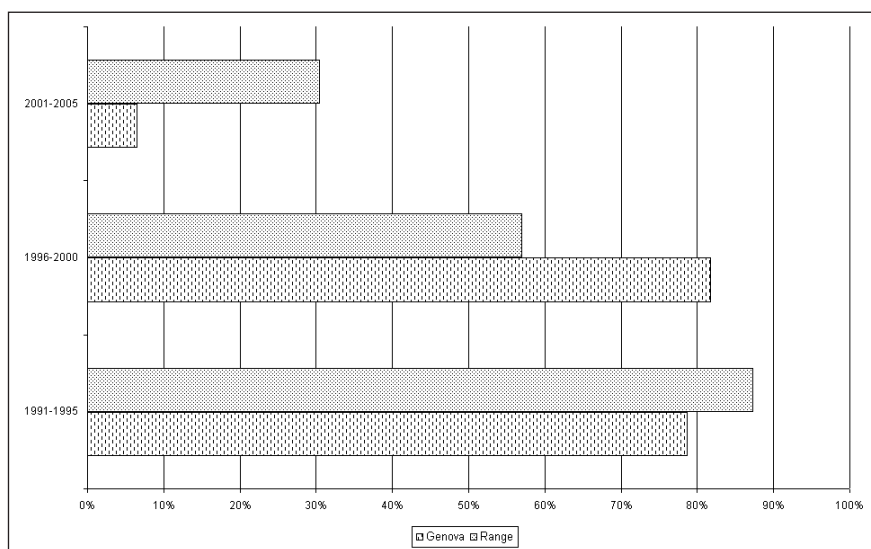
*Fig. 1: Variations in container throughput of Genoa, Valencia, Barcelona (%)*

*Source: authors' elaboration from Containerisation International*

Finally, thanks to figure 2, it is possible to compare the variation of container throughput of the port of Genoa with the one of the range, since 1990.

Only during the five years going from 1996 to 2000 Genoa grows faster than the range's average. Genoa indeed, following the positive trend begun in previous years, shows an 82% increase in throughput, against the 57% upsurge registered by five ports system.

The picture becomes particularly worrying analysing the period from 2001 to 2005, during which, in connection with a slackening in growth at a range level (namely a 30,5% increase against almost 60% during the previous five years), Genoa presents a heavier slowdown (only +6,4% in container throughput). Genoa closes 2005 with a negative result (-0,2%) compared with 2004 as regards container traffic, while the main Spanish ports witness a rise in their throughput, even if at a lower level compared with previous years (+10% as regards Valencia and +12% as to Barcelona).



*Fig. 2: Changes in container traffic (%)*

*Source: Containerisation International*

### 3.2 Outlook analyses and possible scenarios

After having analysed the growth and identified the last years' critical points, the further step has been the definition of possible strategies aimed at stopping the loss of competitiveness currently affecting the port of Genoa, in the light of a recovery in terms of market share.

As already stated, the anticipatory, forecasting approach of the study has necessarily involved the definition of a world growth scenario, including the range of analysed ports. In the light of the great uncertainty of these kinds of anticipations, two possible demand trends have been considered, namely a low and a high profile tendency.

The first scenario is based on a forecasting methodology strictly lined to a typical feature of the transport service, namely its characteristic of derived service, transport demand deriving from a previous, already existent demand of the good to be transported. For this reason, first step has been the identification of a variable significantly affecting transport demand trends; according to Unctad studies, this variable has been identified in the world industrial production. In fact, it has been noticed that the historical trend of transport elasticity in respect to industrial production shows cyclical phases recurring in the course of time. This elasticity trend has subsequently been transposed in the future and combined with the expectations regarding industrial production with the

aim of obtaining a forecast of world transport demand by 2015, quantified in ca. 460 million TEU.

On the other side, the less intense dependence of containerised traffic on the economic situation dynamics has been taken into account; correspondingly, the sole historical trend of containerised transport has been taken into account, leading to a high profile forecast of ca. 659 million TEU by 2015.

Following the same growth trends of world demand, by 2015 the considered range of ports would reach throughput levels of more than 9.890 thousand TEU, as to the low profile scenario, and nearly 14.180 thousand TEU as to the high one. The increase of handled volumes in the North West Mediterranean basin, is supported, from a macroeconomic point of view, by two tendencies: on the first hand, the growth of European consumptions, recording in 2005 a variation of 1,3% respect to previous year, on the other hand, Far East Gross Domestic Product, greatly influencing the world industrial production and representing, already in 2004, nearly 19% of world GDP.

Supposing that the port of Genoa maintains a “zero growth” in the course of the decade, thus recording the same 2005 throughput, the port’s market share compared to the range would decrease to 16,4% of total traffic according to the low profile scenario, and to 11,5% in the high profile one.

Evidently, such a loss of competitiveness would coincide with an advantage for the port’s main competitors and in a further increase of the already existing gap, with particular reference to Spanish ports.

In order to maintain at least the same market share recorded in 2005, namely 20%, the 2015 throughput of the port of Genoa should reach an amount of TEU comprised between 2 and 2,870 million TEU, implying a traffic increase, compared to 2005, between 23% and 76%.

### 3.3 Logistics strategies and consequent logistics implications

In the light of what stated so far, the challenge for the future of the port of Genoa will be the interception of the foreseen incremental traffic volumes; this is only possible on condition that the infrastructural endowment of the port will be adapted, the system of services will be improved in terms of quality, times, punctuality and reliability, safety and security, variety, etc, becoming able to face the logistics implications involved by the traffic increase. To miss this opportunity would imply an important displacement of traffic flows, currently handled by North-West Mediterranean ports, partly in favour of Spanish ports, partly towards North European ones<sup>13</sup>.

<sup>13</sup> Besides, foreseen projects for European multimodal corridors, aimed at improving the connections among European Union countries, and between these countries and Eastern Europe, would represent a further competitive advantage playing in favour of North European ports.

Departing from the analysis of port choice criteria, it is possible to identify some strategic lines directed to the increase of traffic flows, with the minimum aim of maintaining at least current market share.

It is worth mentioning that the determinant factors influencing the decisions about routes and ports of call correspond to a great extent to those elements chiefly conditioning port's competitiveness; it is therefore of utmost important to identify the domains where it is possible or appropriate to intervene, and in which way.

The competitiveness elements, endowing the port with a greater attractiveness towards present and potential customers, can be divided according to relative type and time period. The geographical position with respect to markets and maritime routes, which could represent the main factor of geographical accessibility, plays undoubtedly a fundamental role, but is characterised by its basic immutability. On the contrary, it is possible to act on infrastructural factors, determining the physical accessibility of a port, and on those connected to the cost and quality features of services offered, influencing the economical one.

The geographical position certainly represents a source of advantage for the port of Genoa towards competitors located in the so-called *Northern Range* and in the Mediterranean basin, with particular reference to East-West routes having their origin and destination in Far East countries, especially in the light of the intense economic growth of China and India. As far as the maritime segment is concerned, the selection of the port of Genoa to the detriment of North European or Spanish competitors allows as a matter of fact to achieve relevant time savings, ships' size being equal, quantifiable, for instance, in four days with respect to the Antwerp - Singapore route and in two or four days as to the Antwerp- Barcelona one<sup>14</sup>.

This is actually an unassailable advantage by side of competing ports, but the benefits deriving for port users run the risk of being thwarted if the technical-qualitative characteristics of the logistics chain supporting the port are not adequate. It is furthermore worth specifying that, in the framework of the competition existing among Mediterranean ports, for some routes the geographical position is a common factor, not able to exert a discrimination effect nor to determine a attractiveness gap.

As to the infrastructural system, in a framework in which ports' competitiveness increasingly depends on the development of the country's

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<sup>14</sup> This result derives from the scheduling of some lines connecting the ports of Singapore and Genoa, Barcelona and Antwerp: specifically, KY-AMS and AMX lines, operated by Yang Ming Marine Transport Group, and EU2 e CEX lines, operated respectively by Grand Alliance and Hapag Lloyd Container Linie GmbH. The differential between Genoa and Barcelona fluctuates from minimum 2 to maximum 4 days depending on the line scheduling. Source: Containerisation International

logistics<sup>15</sup>, it is possible to assert that the current Genoese network does not allow the traffic growth highlighted in previous sub-section<sup>16</sup>. The residual infrastructural capacity, both on the land and sea side, seems not to have the essential requirements to hold and handle the traffic increase which would allow to maintain current market positioning/ranking by 2015. Port activities would contribute to an increase of the hinterland congestion level and would wholly take relative consequences. In the absence of actions, a reduction of Genoese market share is therefore looming, coupled with a contextual increase of the gap in the rates of growth with respect to other ports, with particular reference to Spanish ones. The possible strategies are twofold: whereas on the one hand they regard the development of port's the connection network with the hinterland, allowing a fast and efficient cargo forwarding towards final destinations, on the other hand they imply investments intended for increasing port capacity (in terms of quays, yards, warehouses, depth, etc.).

From the point of view of the port, the projects foreseen in the Port Masterplan assume a relevant role, especially the completion of the fillings of Bettolo wharf and of the water mirror between Ronco and Canepa wharfs and the solution of the financial and organizational problems related to the Sixth Module. The default of capacity increase would sharpen the already existing gap between the port of Genoa and the main Spanish competitors. In fact, the three main Spanish ports pursue a development of potential capacity by 2015 that will allow a throughput of 10 million TEU for the port of Algeciras, 7 million TEU for Valencia and 9 million TEU for Barcelona<sup>17</sup>.

Needless to say, in order to support foreseen traffic growth, port infrastructural development has to be associated with actions on connection infrastructures. In fact, considering that the city embraces the port and that port throughput does not have a preferential, dedicated distribution way, but combines with urban traffic, a throughput increase would imply a seriously negative impact on urban mobility: an increase of handlings would actually generate a worsening and burdening of the already congested urban mobility. To match recent European Union directions<sup>18</sup>, focused on transport sustainability, the main goal should be the transfer of traffic from the road to the rail modality, through adequate infrastructural investment policies, giving preference to a rail network improvement. As far as the port of Genoa is concerned, a high congestion at the urban level is observed, too: in fact, private mobility merges with cargo haulage both on the rail and on the road network, implying the need for a reorganisation directed to separate the two different traffic types. In this

<sup>15</sup> Costa, A., 2006.

<sup>16</sup> . For further widening about the adequacy of the Ligurian land infrastructural system refer to FILSE, 2005.

<sup>17</sup> Estrada, J.L., 2006

<sup>18</sup> On this subject see European Commission, 2001.

framework, the rationalisation of the Genoese railway junction, closely linked to the possible full capacity activity of the “terzo valico dei Giovi<sup>19</sup>”, on the one hand, and the necessary rationalization of on the road and motorway junctions, on the other hand, appear to be of utmost importance for the accessibility level of the urban area and the port of Genoa, and, to a broader extent, of the whole Ligurian region.

In a framework of foreseen growth and in the light of the strategies of shipping companies and of the transport and distribution sector trends in last years, the availability of areas, intended for logistics and warehousing activities, *trait d'union* between the infrastructural element and the quality and variety of port services, seems to be crucial for port competitiveness, both from the point of view of present situation and for future years. Within these areas, tendentially located in the closest port hinterland, or within port areas, shippers or transport and logistics operators arrange and realise cargo distribution within the port's gravitation area, or otherwise make use of or provide logistics value added services to ships and cargo. The availability of these areas, given that nowadays the transport-logistics chain is typically considered as a whole, rather than in its single links, seems to represent an unavoidable part of the supply of port services, which should not be disregarded or underestimated by local and national decision makers. This evidence is confirmed by the strategies of the main competitors located in Northern range and in the Mediterranean, where logistics areas are largely available and effective and towards which it is necessary to bridge the existing gap without further delay. Considering the orography of the Ligurian land, the port of Genoa appears to be extremely disadvantaged as to the search of areas to be allocated to logistics, suggesting that it can't be limited by the formal boundaries of the region. An important opportunity is so represented by the approach of cooperating to compete, through a common strategy or a sequence of shared, mutual ventures with inland regions allowing the broadening of the range of services offered. With such a strategy, the port “lengthens”, gets near to its costumers and widens its intermodal hinterland, can solve part of its saturation and congestion problems and increase its competitiveness, offering new and more services to the users and attracting new and more traffic. In the same direction, some forms of regional cooperation, currently a key topic of Italian transport politics would be indubitably helpful, with the aim of arranging logistics platforms in Lower Piemonte, serving of Ligurian ports, with particular reference to Genoa and Savona. This would mean to exploit the advantages and characteristics of different regions, setting off the relative strengths (the presence of important ports on the one hand and

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<sup>19</sup> Literally, the third tract of Giovi: the section belongs to the 5<sup>th</sup> Trans-European corridor (Lisbon - Kiev). More in depths, the Terzo Valico dei Giovi is located between Genoa and Central and Northern Europe, and will pass through the Apennine under a new tunnel of 38.9 km.



the availability of large areas on the other) and filling the respective lacks, on the lookout of synergies and *win-win* strategies.

Another factor spurring to the creation of logistics and distribution areas is the comparatively greater value that these kind of activities tend to leave within the region, compared to port handling activities (in terms of operations, occupation, economic growth).

The financial requirements to realise the necessary infrastructural works or to effectively develop existing ones could be partially covered resorting to investments by a partnership of government and one or more private sector companies (PPP, or P3, public-private partnership), for instance through project financing; actually, there is a cartel of entrepreneurs (for the most part belonging to the bank sector) interested in financing the construction of the *terzo valico dei Giovi*. Needless to say, private involvement implies an agreement with the government as to the construction and subsequent management of the infrastructure, according to the worldwide numerous examples.

As far as the quality and cost of services are concerned, the former is definitely ascribed a greater importance than the latter: transport and logistics operators actually tend to prefer high quality standard solutions to cheaper alternatives. Nevertheless, it is also true that if the port is not able to offer high added value and first-rate services, the user pursues the “second best” aim of cost minimisation. This situation interferes with the aim of customer fidelisation, and the port loses its capacity of reaction and competitiveness towards competitors’ strategies, both directed to increase the quality level and aimed at price reduction.

In this framework, it is possible to identify some margins of action to increase the quality level of port service supply in order to customise it, adapting it in order to better match demand requirements (actual and already existing but also potential, obtainable). Among possible lines of action, service informatization, public services effectiveness, human resources’ productivity and professionalism, operational times’ reduction, a greater attention to cargo management and transport activities reliability, consideration for issues of *safety* and *security*) and the aforementioned services to firms and cargo.

At last, the importance of the political aspect and port industry governance has to be highlighted: the sector, in the light of relative strategic role with respect to national economy and country competitiveness should be duly considered and exploited by national and local governments and institutions within the sphere of their political and economic decisions. For instance, a crucial point concerns the identification of the right *trade off* among the concern for *nimby*<sup>20</sup> orientations by citizen fearing that a port expansion would imply a detriment of

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<sup>20</sup> *Nimby* is the acronym for *Not In My BackYard*, and identifies the attitude of those acknowledging the necessity or feasibility of an action but considering it unwelcome, in view of possible negative consequences falling on the local sphere.

their standard of living, and the pursue of strategic, long period objectives aimed at the achievement or increase of general welfare.

The strategies allowing the maintenance of current market shares are manifold and depend on the decisions of different actors, in confirmation of the complexity of port industry. The good will and the interest of the whole port community and of the public and private stakeholders differently involved in the port sphere proves to influence to a great extent the opinions concerning the quality level of supplied services and the competitiveness of the port as a whole.

## 4. CONCLUSIONS

In current background, where geographical distances progressively “die”, fade away, and the non monetary components of transport cost correspondingly increase, ports have to face new competitors, often located at great distance. Consequently, ports and port systems need to renew policies and competitive strategies, in the light of the new market characteristics.

The evaluations of port competitiveness, understood as the system’s ability to react to competitive threats coming from the external environment, plays therefore a fundamental/key role. Assuming market share as a good proxy of port competitiveness, the authors’ aim is to define some practicable strategic lines, to avoid a loss in terms of market share and a consequent corresponding system’s drop. Following a *bottom up* procedure, namely generalising results obtained analysing the particular Genoese case in order to derive common, appropriate policy lines, it is possible to infer that the actual bet for ports’ future is the development of logistics activities, giving scope for added value both for cargo passing through the port and for the whole region hosting the port.

A logistics development, in the broadest meaning, doesn’t only imply an improvement in terms of service quality and variety, but also other unavoidable factors, having a strategic importance for the triggering of this development. In short, there are some must-have characteristics which allow considering a port a competitive one, among which:

- An adequate port infrastructure capacity, able to receive/hold foreseen traffic increase. Possible constraints can be overcome either investing in projects aimed at expanding the infrastructural capacity or through a better and more efficient management of container within the port, allowing a faster turnover;
- A high land accessibility level in terms of infrastructural connection network, allowing an efficient and effective traffic flow from and to the port. In the case this does not occur, infrastructural intervention becomes necessary to grant a prompt cargo handling and distribution, limi-

ting congestion both of the connection network and of the port infrastructure;

- An appropriate availability of spaces meant for logistics activities: this occurrence depends to a great extent on the morphology and urban planning trends of the region hosting the port. If these spaces are not available in the port's immediate vicinity - this is actually the case of the port of Genoa – a possible solution can be represented by cooperation policies at regional level aimed at the search and acquisition of farther areas;
- A special attention to service quality, from the point of view of customer fidelisation: the price-reduction strategy should be set aside in favour of quality policies, through strategies aimed at the minimization and certainty of operational times and at the widening of the range of added services offered. For a prompt achievement of these targets, information and communication technologies can be of critical relevance.

Considering the variety and scope of possible intervention, the interaction among the number of actors involved in decision processes and the variety of sometimes conflicting aims, the attention to particular interests should be overcome by the aim of a growth of the port system as a whole; the achievement of this goal seems to depend on the establishment of a common organization.

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### *Sažetak*

## **KONKURENTNOST, RAST I UKLJUČIVANJE LOGISTIKE: SLUČAJ LUKE GENOVA**

*U sadašnjem svjetskom ekonomskom okviru kojeg karakterizira intenzivan proces globalizacije i informatizacije, fenomen poznat pod nazivom "smrt udaljenosti" ima svoj učinak i na transportu. Uslijed širenja granica tržišta dolazi do dobro poznatog preklapanja zaleđa i intenziviranja konkurencije.*

*Nakon analize relevantnih razloga zbog kojih se proučava konkurentnost luka, u radu se daje procjena postojeće i buduće konkurentnosti luke Genova unutar Sredozemnog mora. Također se navode i moguće strategije koje imaju za cilj održati konkurentan položaj u odnosu na glavne konkurente, barem u odnosu na stalan udio na tržištu. Ako idemo mnogo dublje, izgleda da bi se uspješne strategije morale usmjeriti na unapređenje velikog broja luka, transportnih i logističkih usluga, a što je danas neizbježno ako želimo da luka u potpunosti učinkovito radi.*

*Na kraju se u radu daje prikaz značenja logistike u okviru razvoja luke i to kao uzrok i posljedica povećanja prometa luke, te se istražuju temeljni zahtjevi koji se moraju ispuniti da bi takav rast prometa luke bio održiv.*

**Ključne riječi:** *razvoj luke, konkurentnost, logistika, razvojna strategija, infrastruktura*

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